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Inhibition of vascular endothelial cell growth factor activity by an endogenously encoded soluble receptor.

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Abstract

Vascular endothelial cell growth factor, a mitogen selective for vascular endothelial cells in vitro that promotes angiogenesis in vivo, functions through distinct membrane-spanning tyrosine kinase receptors. The cDNA encoding a soluble truncated form of one such receptor, fms-like tyrosine kinase receptor, has been cloned from a human vascular endothelial cell library. The mRNA coding region distinctive to this cDNA has been confirmed to be present in vascular endothelial cells. Soluble fms-like tyrosine kinase receptor mRNA, generated by alternative splicing of the same pre-mRNA used to produce the full-length membrane-spanning receptor, encodes the six N-terminal immunoglobulin-like extracellular ligand-binding domains but does not encode the last such domain, transmembrane-spanning region, and intracellular tyrosine kinase domains. The recombinant soluble human receptor binds vascular endothelial cell growth factor with high affinity and inhibits its mitogenic activity for vascular endothelial cells; thus this soluble receptor could act as an efficient specific antagonist of vascular endothelial cell growth factor in vivo.

MeSH

[Alternative Splicing](#); [Base Sequence](#); [Cloning, Molecular](#); [Cross-Linking Reagents](#); [DNA Primers](#); [DNA, Complementary](#); [Endothelial Growth Factors](#); [Endothelium, Vascular](#); [Gene Expression](#); [Human](#); [In Vitro](#); [Kinetics](#); [Lymphokines](#); [Mitogens](#); [Molecular Sequence Data](#); [Polymerase Chain Reaction](#); [RNA, Messenger](#); [Receptor Protein-Tyrosine Kinases](#); [Receptors, Growth Factor](#); [Solubility](#)

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